

## **REMARKS/ARGUMENTS**

Applicant responds herein to the Office Action dated September 28, 2007. A Petition for Extension of Time (one month) and the fee therefor are submitted herewith.

Claims 1-45 are in the application.

In the Official Action the Examiner rejected claims 1-46 under 35 USC §112, second paragraph, as being indefinite for including both apparatus elements and method steps in a single claim, claim 1. In response thereto, claim 1 has been amended to clearly specify and claim the method steps, in relation to the apparatus for which the method is intended. To the extent necessary, antecedent basis for the method steps has been provided. The fact that the method entails, as one step thereof, an actual use of the apparatus, does not in any way affect the definite nature of the claim. Missing periods in claims 4 and 45 have been added to properly render them as single sentences. The separate rejection of claim 46 has been rendered moot by the cancellation thereof. The Examiner is accordingly requested to review and withdraw the rejection of the claims based on 35 USC §112, second paragraph.

The Examiner rejected claims 1, 4, 6-25, 33-42 and 44-46 under 35 USC §102(a) as being unpatentable over Li, in view of Davis. Claims 1-5, 17-38 and 42-46 were further rejected under 35 USC §103(b) as being unpatentable over Tanaka, in view of Colding.

In response thereto it is submitted that the presently claimed invention is a method for predictive maintenance of an automatic cutting machine during the normal operation thereof. This is done by effecting actual cutting operations on an article, which is normally cut by the cutting machine, and determining a characteristic which is directly related to the physical contact between the cutting elements and determining a curve of this value as a function of time (during use). The claims further require, as amended, the extrapolating of a future time pattern of the characteristic quantity value and then programming maintenance work on the cutting unit when the future time pattern is outside a given acceptance range. Note that this is not a determination of the useful lifetime of a cutting tool. It is also not simply a work monitoring function (though monitoring is obviously required to perform the maintenance function).

With these factors in mind it is submitted that the Li reference is totally inapposite to the present invention. Li discloses a method for determining the expected lifetime of a file which is shown (Figure 1) as being a hand tool. There is nothing, nor can there be anything, in Li with the step parameters required for the present claim, of establishing a curve during actual use, since a

hand file is not amenable to such measurements during use. Instead, the file is shown in conjunction with a device to measure its characteristics (not actual operational use characteristics). This is totally unrelated to the predictive maintenance of the present invention and the method steps used to achieve maintenance with a curve generation by actual use and especially an automatic programming of maintenance not possible with a hand tool.

The Davis reference cannot add anything to the Li system of a hand tool file, which cannot be modified as suggested, in order to arrive at the present invention. The Examiner is accordingly requested to review and withdraw the rejection of the claims based on the combination of Li and Davis.

With respect to the rejection of the claims based on Tanaka, in view of Colding, it is submitted that Tanaka is concerned with a simple life span estimation and replacement and is not concerned with any maintenance determinations. In addition, since there is only a lifespan determination, only a single point is necessary and disclosed as being the end point. As a result no operational curve such as of the characteristic quantity value (V) as a function of time curve of the present claims is required or even generated. Similarly, the Colding reference is concerned with direct wear measurement of a tool leading up to replacement. There are no maintenance operations nor are such operations and measurements carried out or needed to be carried out. A combination of Tanaka and Colding would accordingly not provide the presently claimed invention. The Examiner is accordingly requested to review and withdraw the rejection of the claims based on the combination of Tanaka and Colding.

In view of the above amendment and discussion it is submitted that the claims are patentable over the prior art and the application is in condition for allowance with such favorable action being respectfully requested. Accordingly, the Examiner is respectfully requested to reconsider the application, allow the claims as amended and pass this case to issue.

THIS CORRESPONDENCE IS BEING  
SUBMITTED ELECTRONICALLY  
THROUGH THE UNITED STATES  
PATENT AND TRADEMARK OFFICE  
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Respectfully submitted,



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